REMARKS

This Response is in reply to the Final Office Action mailed on June 30, 2004. Claims 1-8, 10 and 12 are pending in this application. Claims 1 and 10 have been amended. Claims 13-19 have been canceled. No new matter has been added. Entry and consideration of the amendments and following remarks is respectfully requested.

35 U.S.C. §112 Rejections

Claims 1-19 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claims the subject matter which applicant regards as the invention. Claims 1 and 10 have been amended to overcome the rejections. Claim 1 was amended to emphasize that the virtual image is a model of a real field environment portion of the process elements, which was already presented in claim 10. Also, claims 1 and 10 have been amended to clarify that the graphic image shows the location of a process element in the model of the real field environment portion of the process elements. Claims 13-19 have been canceled. Therefore, it is respectfully requested that the Examiner withdraw the 35 U.S.C. §112 rejection.

Claims Objections

Claims 13-18 are objected to as being a substantial duplicate thereof of claims 3-8, respectively. Claims 13-19 have been canceled. Therefore, it is respectfully requested that the Examiner withdraw the objection.

35 U.S.C. §103 Rejections

Claims 1-5, 7, 10, and 12 were rejected under 35 U.S.C. §103 (a) as being unpatentable over Brinzer (U.S. Patent 6,031,453) and Takahara et al. (U.S. Patent 5,412,400). These rejections are respectfully traversed.

In Applicant's invention, there is a terminal for displaying a process graphic diagram which illustrates the process to be controlled. The process graphic diagram consists of symbols representing the process elements, for example, pumps, pipes etc. and information about the status of the process. The operator can control the process by monitoring the process graphic diagram. By clicking with the mouse the process elements in the process graphic diagram, the operator can call graphic images of the process elements on the display. The graphic image is a 3-dimensional virtual image. A virtual image is not a real image of the process element, but an artificially produced image formed by software that corresponds to a real image. It also shows a model of the real field environment portion of the process element. Thus, the virtual image is a model of the real field environment portion and it is possible for the operator to see basically everywhere in the created virtual environment. The operator can also "virtually wander" in the process facilities. This helps the operator to get familiar with the process and learn the actual locations of the process elements. This is also very useful for maintenance personnel as the locations of the process elements needing attention can be checked virtually before entering the plant area.

The term "virtual" may be defined as follows: "not physically existing as such but made by software to appear to do so" (The New Oxford Dictionary, 1998). Virtual image is thus not a video

surveillance image provided by a TV-camera. Consequently, if any actual fault is caused in the process elements, e.g. a valve is broken and it is causing water to spray around, it (the water spraying) can not be seen in the virtual image. Another example is a situation where two tanks are connected by a pipe and appear in the same process graphic diagram. The pipe on the display of the process graphic diagram is only 20 millimetres long. When the same tanks and pipe are being brought up as a graphic image, the operator notices that the pipe is 300 metres long.

Brinzer does not teach a graphic image which is a virtual image of the selected part of the process graphic diagram as claimed in the present invention. Instead, Brinzer teaches only a geometric 2-dimensional structure of a control cabinet. Fig. 5 of Brinzer shows only a geometric structure of a control cabinet (col. 2, line 34; col. 4, lines 20-21).

Brinzer discloses a method for monitoring an automation system which is controlling a technical process. In the automation system, there are control cabinets where the circuit elements are attached. Brinzer provides a solution for locating a fault in the automation system, i.e. in the circuit elements in the control cabinet. According to Brinzer, the prior art systems have displays that graphically display the process to be monitored and when a fault in circuit elements occurs, the fault is displayed by showing it's consequences to the process and not the broken component itself nor the location of the fault or the rack or the position of the circuit element in the rack (col. 1, lines 17-37). As a solution to this problem, Brinzer provides a fault message to appear on the display (col. 3, lines 62-67). By clicking the fault message the user calls up the fault display function which is a display of the control cabinet in which the fault has occurred (col. 4, lines 8-13). The display

shows the geometric structure of the control cabinet, which structure is determined from the planning and design data (col. 4 lines 14-21). The module with the fault can be seen in the retrieved structure of a control cabinet by color marking (col. 4 lines 24-35). Thus, Brinzer only suggests to use the system for locating the fault.

The invention of Takahara does not show a model of a real field environment portion of the process element. Also, it is not possible to "wander" in the image. The window displaying method only shows the process element towards which the camera is pointed at the angle the camera is situated.

Takahara discloses a window displaying method for a process control system. For each display, there is a display management area file where the display contents for each display are determined (col. 7, lines 49-68). The purpose is to manage the displays so that they do not cover each other and hinder seeing the other display frames. In the process to be controlled, TV cameras providing real images of the process elements are installed on the site of the plant. They cover the control devices and pick up images of the control devices and the operating state of them (col. 12, lines 27-32). One of the displays in the process control system is a display for inputting the image from a TV camera following the control device from which information is needed. The TV cameras in Takahara thus provide on-line surveillance information of a control device.

Combining the Brinzer and Takahara references would not lead to a solution according to the present invention, but only to a solution where a TV-camera is monitoring a control cabinet with

subracks in a process control system and the TV camera is proving real image information of the control cabinet on-line.

Claim 6 was rejected under 35 U.S.C. §103 (a) as being unpatentable over Brinzer, Takahara and Itoh (EP 0716364). This rejection is respectfully traversed.

Regarding claim 6, Itoh (EP 0716364) shows an operator support system where the display system can be a portable wireless system. Combining Brinzer, Takahara and Itoh would lead to a solution where the TV-camera is monitoring a control cabinet in a process control system and the TV camera is proving real image information of the control cabinet on-line. The real image information could be monitored by a portable display system. This is completely different from the present invention.

Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Brinzer, Takahara and Uchida (EP 0626697). This rejection is respectfully traversed.

Regarding claim 8, the presented Uchida presents a plant monitoring and diagnosing method where a plant structure image can be enlarged. Combining Brinzer, Takahara and Uchida would lead to a solution where TV-camera is monitoring a control cabinet in a process control system and the TV camera is proving real image information of the control cabinet on-line. The real image information could be enlarged for clarifying a certain part of the control cabinet. This is completely different from the present invention.

The Applicant submits that there is absolutely no teaching or suggestion in Brinzer that would lead one to combine the teachings of that reference with Takahara, Itoh or Uchida. None of the references teach or suggest the present invention. As such, absent some motivation, one of ordinary skill in the art would not combine the invention of Brinzer with the teachings of Takahara, Itoh or Uchida. Furthermore, the Applicant submits that even if the references were combined, the result would not be the present invention as discussed above.

Accordingly, the Applicant asserts that amended claim 1 is patentable over the cited prior art. Furthermore, since claims 2-8, 10 and 12 depend from independent claim 1, and for the reasons stated above, these claims are allowable as well. It is therefore respectfully requested that the rejection of the claims under 35 U.S.C. §103(a) be withdrawn.

Conclusion

In view of the amendments to the claims 1 and 10 made herein and the arguments presented above, it is submitted that the Examiner's rejections have been overcome and should be withdrawn. The application should now be in condition for allowance.

The Applicant notes that there is no indication that the drawings are acceptable. The Applicant respectfully requests that the Examiner provide indication that the drawings are accepted by the Examiner in the next formal communication.

Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

A petition for a one-month extension of time with the requisite fee is attached herewith. In the event that any other extensions and/or fees are required for the entry of this Amendment, the Patent and Trademark Office is specifically authorized to charge such fee to Deposit Account No. 50-0518 in the name of Steinberg & Raskin, P.C.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,
STEINBERG & RASKIN, P.C.

By: Dona C. Edwards

Dona C. Edwards
Reg. No. 42,507

Steinberg & Raskin, P.C.
1140 Avenue of the Americas
New York, New York 10036
(212) 768-3800